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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/750,045

12/30/2003

Justin K. Brask

42P17528

9152

7590

11/10/2005

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EXAMINER

WEISS, HOWARD

ART UNIT

PAPER NUMBER

2814

DATE MAILED: 11/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/750,045	BRASK, JUSTIN K.	
	Examiner	Art Unit	
	Howard Weiss	2814	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 ~~is~~/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 26-28 ~~is~~/are allowed.
- 6) ☒ Claim(s) 1-25 and 29-31 ~~is~~/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Attorney's Docket Number: 42P17528

Filing Date: 12/30/03

Continuing Data: none

Claimed Foreign Priority Date: none

Applicant(s): Brask

Examiner: Howard Weiss

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1 to 4, 6 to 8, 11 to 17, 19 to 22 and 29 to 31 are rejected under 35 U.S.C. 102(b) as being anticipated by Laker (U.S. Patent No. 3,738,880).

Laker shows all aspects of the instant invention (e.g. Figures 1 to 4) including:

- forming a polycrystalline silicon film **20** having a degenerate lattice with first atoms (i.e. silicon) in a first region **P** and a second region **I**
- forming a mask **22** with an opening **24** formed over said first region and covering said second region
- implanting boron dopants (which are smaller than silicon atoms) through said opening and removing said mask
- heating the polycrystalline silicon film to activate said dopants and forming a non-degenerate lattice in said first region
- exposing the first and second regions to a wet, hydroxide etchant of pH between 9 and 11 which etches said second but not the first region

In reference to the claim language pertaining to the forming of a non-degenerate lattice, lattice energy activation barrier and other features, the claiming of a new use, new function, or unknown property which is inherently present in the prior art does

not necessarily make the claim patentable. (In re Best, 195 USPQ 430, 433 (CCPA 1977) and In re Swinehart, 439 F. 2d 210, 169 USPQ 226 (CCPA 1971); please see MPEP § 2112). Since Laker shows all the features of the claimed invention, these features and properties of the doped and non-doped regions are an inherent property of Laker's invention.

3. Claims 23 to 25 are rejected under 35 U.S.C. 102(b) as being anticipated by Carley (U.S. Patent No. 3,980,507).

Carley shows all aspects of the instant invention (e.g. Figures 6 to 9) including:

- forming a boron-doped polycrystalline silicon film **58** having a non-degenerate lattice with a first **70,72** and second **74** regions
- substituting atoms into said first regions making a less non-degenerate lattice
- exposing the first and second regions to an which etches said first regions but not the second region

In reference to the claim language pertaining to the forming of a non-degenerate lattice, the claiming of a new use, new function, or unknown property which is inherently present in the prior art does not necessarily make the claim patentable. (In re Best, 195 USPQ 430, 433 (CCPA 1977) and In re Swinehart, 439 F. 2d 210, 169 USPQ 226 (CCPA 1971); please see MPEP § 2112). Since Carley shows all the features of the claimed invention, the claimed features and properties of the regions are an inherent property of Carley's invention.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 5, 9, 10 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Laker and Nihonmatsu et al. (U.S. Patent No. 6,346,485).

Laker shows most aspects of the instant invention (Paragraph 2) except for the crystalline being GaAs or InSb, an acid etchant and the dopants larger than said first atoms. Nihonmatsu et al. teach the equivalence of silicon and GaAs or InP (Column 16 Lines 1 to 6) which would make the atoms smaller than the boron dopants and the use of an acid etchant to prevent contamination and control flatness (Column 9 Lines 9 to 17). It would have been obvious to a person of ordinary skill in the art at the time of invention the crystalline being GaAs or InSb, an acid etchant and the dopants larger than said first atoms as taught by Nihonmatsu et al. in the process of Laker to prevent contamination and control flatness.

Allowable Subject Matter

6. Claims 26 to 28 are allowed.
7. The following is a statement of reasons for the indication of allowable subject matter: a method of forming gate electrodes of different work functions as claimed including using sacrificial gate electrode material of different etchant reactions could not be anticipated nor, in combination, be rendered obvious over the prior art of record.

Conclusion

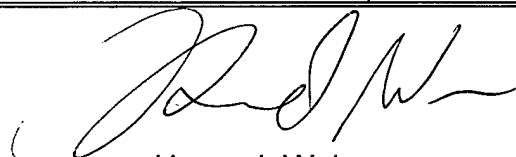
8. Papers related to this application may be submitted directly to Art Unit 2814 by facsimile transmission. The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (15 November 1989). The Art Unit 2814 Fax Center number is **(571) 273-8300**. The Art Unit 2814 Fax Center is to be used only for papers related to Art Unit 2814 applications.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Howard Weiss at **(571) 272-1720** and between the hours of 7:00 AM to 3:00 PM (Eastern Standard Time) Monday through Friday or by e-mail via Howard.Weiss@uspto.gov. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael Fahmy, can be reached on **(571) 272-1705**.
10. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at **866-217-9197** (toll-free).
11. Paper copies of cited U.S. patents and U.S. patent application publications will cease to be mailed to applicants with Office actions as of June 2004. Paper copies of foreign patents and non-patent literature will continue to be included with office actions. These cited U.S. patents and patent application publications are available for download via the Office's PAIR. As an alternate source, all U.S. patents and patent application publications are available on the USPTO web site (www.uspto.gov), from the Office of Public Records and from commercial sources. Applicants are referred to the Electronic Business Center (EBC) at <http://www.uspto.gov/ebc/index.html> or 1-866-217-9197 for information on this policy. Requests to restart a period for response due to a missing U.S. patent or patent application publications will not be granted.

12. The following list is the Examiner's field of search for the present Office Action:

Field of Search	Date
U.S. Class / Subclass(es): 438/ 753, 924	11/7/05
Other Documentation: PLUS Analysis Report	11/7/05
Electronic Database(s): EAST	11/7/05

HW/hw
8 November 2005



Howard Weiss
Primary Patent Examiner
Art Unit 2814